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Software Quality Assurance Plane
(SQA P)

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(3) SQA Plan

The SQA Plan provides a road map for instituting software quality assurance.
Developed by the SQA group (or by the software team if an SQA group does not exist), the
plan serves as a template for SQA activities that are instituted for each software project.
The standard recommends a structure that identifies:

1. The purpose and scope of the plan.
2. A description of all software engineering work products (e.g., models, documents, source code) that fall within the purview of SQA.
3. All applicable standards and practices that are applied during the software process.
4. SQA actions and tasks (including reviews and audits) and their placement throughout the software process.
5. The tools and methods that support SQA actions and tasks.
6. Software configuration management procedures.
7. Methods for assembling, safeguarding, and maintaining all SQA-related records.
8. Organizational roles and responsibilities relative to product quality.

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1.Software Quality Assurance Plan •
The plan provides the guidelines for development of software to ensure the quality required in a software project • These procedures affect planning, designing, writing, testing, documenting, storing, and maintaining computer software.

2.Steps to Develop and Implement a Software Quality Assurance Plan

 • Step 1. Document the Plan • Step 2. Obtain Management Acceptance • Step 3. Obtain Development Acceptance • Step 4. Plan for Implementation of the SQA Plan • Step 5. Execute the SQA Plan

Step 1. Document the Plan •

 The software quality assurance plan should include the • sections below: 1. Purpose Section —This section describe the specific purpose and scope of the particular SQA plan. It should list the name(s) of the software items covered by the SQA plan and the intended use of the software. 2.Reference Document Section —This section provides • a complete list of documents referenced elsewhere in • the text of the SQA plan.

Software Configuration Management Section

—This section is addressed in detail in the project's software configuration management plan. • Mechanisms for management, control and accounting of the changes. • Defines the process of change • Keeps track of what is happening in the project • Solves conflicts in the changes 4.Problem Reporting and Corrective Action Section 5.Tools, Techniques, and Methodologies Section —This section identifies the special software tools, techniques, and methodologies that support SQA, states their purposes, and describes their use. •

4. Code Control Section

—This section defines the • methods and facilities used to maintain, store, secure, and document the controlled versions of the identified software during all phases of Development.

5. Records Collection, Maintenance, and Retention Section

—This section identifies the SQA documentation to be retained. It states the methods and facilities to assemble, safeguard, and maintain this documentation, and will designate the retention period. 8. Testing Methodology —This section defines the testing approach, techniques, and automated tools that will be used.

Step 2. Obtain Management Acceptance •

Management is responsible both for ensuring the quality of a software project and providing the resources needed for software development. • The level of management commitment required for implementing an SQA plan depends on the scope of the project.

6.Software quality is often left to software developers. •

8.To address management concerns, software life cycle costs should be formally estimated for projects implemented. In general, implementing a formal SQA plan makes economic and management sense.

Step 3. Obtain Development Acceptance •

Because the software development and maintenance personnel are the primary users of an SQA plan, their approval and cooperation in implementing the plan are Essential No SQA plan is successfully implemented without the involvement of the software team members and their managers in the development of the plan. • When projects become much larger (i.e., encompassing entire divisions or departments), representatives of project subgroups should provide input. Constant feedback from representatives to team members helps gain acceptance of the plan.

Step 4. Plan for Implementation of the SQA Plan •

 The process of planning, formulating, and drafting an SQA plan requires staff and word-processing resources. • The individual responsible for implementing an SQA plan must have access to these resources. • A schedule for drafting, reviewing, and approving the SQA plan should be developed.

Step 5. Execute the SQA Plan •

 The actual process of executing an SQA plan by the software development and maintenance team • The auditing function must be scheduled during the implementation phase of the software product so that improper monitoring of the software project will not hurt the SQA plan. • Audit points should occur either periodically during development or at specific project milestones (e.g., at major reviews or when part of the project is delivered).

6. Verification versus Validation •

Verification is proving that a product meets the requirements specified during previous activities carried out correctly throughout the development life cycle. • Validation checks that the system meets the customer's requirements at the end of the life cycle.

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